

REMARKS

The Office Action mailed September 12, 2002 has been carefully reviewed and considered. Claims 1-9 were pending in the present application. By way of this amendment and reply, claims 1, 6 and 7 have been amended and claim 4 has been cancelled without prejudice or disclaimer. Claim 10 has been added to further define the invention. No new matter has been introduced. Accordingly, claims 1-3 and 5-10 are pending for consideration.

In the Office Action, claim 1 was rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Lindberg (U.S. Patent No. 5,519,269). In view of the amendments to claim 1 and for at least the reasons set forth herein, this rejection has been overcome. In the present invention as recited in amended claim 1, a regulating member (regulating plate 41) is fixed to the closing member (under plate 40) and is disposed in a substantially central section of the slot 25. The regulating member has a function of narrowing the cross-sectional area of the cooling passage 29 in the slot and dividing the space in the slot into two parts. In contrast, Lindberg, in Figure 5 or otherwise, does not disclose or suggest such a regulating member.

By dividing the space in the slot into two parts, two cooling passages 29A are formed in a section in proximity to the coils 30. As a result, the cooling medium flows only in the narrow regions near the coils 30 and unnecessary flow of cooling medium through sections apart from the coils 30 can be avoided. Since the coils 30 comprise concentrated windings as described in paragraph [0029] of the specification, a space for storing the regulating member 41 exists in the slot 25 between the adjacent coils. Lindberg does not disclose or suggest the concentrated windings.

Also in the Office Action, claims 1-4 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Baba et al. (U.S. Patent No. 6,008,563). In view of the amendment to claim 1 and for at least the reasons set forth herein, this rejection has been overcome. In the present invention as recited in the amended claims, the two oil jackets forms an oil chamber on each end face of the stator. Baba et al. do not disclose the two oil jackets on both end faces of

the stator. Unlike the rotating electrical machine of Baba et al., in the present invention, the space in the case 1 for storing the stator and the rotor is partitioned into two parts by the two oil jackets and the closing member 40. Namely, cooling oil is limited in the cooling passage 29 and two oil chambers 12,13. Therefore, a regulating member 41 causes the increase in the speed of the cooling oil and the resultant increase in the cooling efficiency by narrowing the cross-sectional area of the cooling passage.

In contrast, the rotating electrical machine of Baba et al. has no oil jacket. Further the space of the casing 17 is not partitioned, but rather, it is a large single space. In the machine of Baba et al., even if a regulating member is disposed in the cooling passage in the slot, the speed of the cooling oil does not increase in the slot. The speed of the cooling oil increases only outside the slot. Thus, a regulating member in the slot has no effect on the cooling efficiency for coils. Therefore, the member 9 shown in Figure 12 of Baba et al. has a different function from the regulating member 41 of the present invention, and thus does not correspond to the regulating member 41. It should be noted that in Baba et al., the member 9 is provided for securely holding the windings 6 (see lines 1-14, column 12 of Baba et al.)

Furthermore, in the rotating electrical machine of Baba et al., a cooling medium passes through the space portion provided between the adjacent pole protrusions 3a, 3b, 3c of the rotor 2 (see lines 54-58, column 13 and line 66, column 13 to line 3, column 14) This is different than the present invention where a cooling medium passes in the slots.

Also in the Office Action, claim 6 was rejected under 35 U.S.C. § 102(b) as allegedly anticipated by McCabria (U.S. Patent No. 4,409,502). In the present invention as recited in claim 6, the overall region closer to the opening of the slot than the coils is filled by the closing member. This feature is not disclosed or suggested by McCabria. In Figure 7 of the reference, the element 68 (closing member) clearly does not fill out the overall region closer to the opening of the slot than the coils. New claim 10 has been added to further distinguish the structure of the cooling passage from that of McCabria.

In the Office Action, claim 7 was rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over McCabria in view of Abukawa (U.S. Patent No. 6,335,582). In the present invention as recited in claim 7, the stopper 27 is a protrusion positioned on the end of the coiling region. In other words, the stopper 27 is a protrusion in contact with the coil so as to support the coil. Neither McCabria nor Abukawa disclose such a stopper. Claim 7 has been amended to make more clear that the stopper 27 is for supporting the coil.

For the reasons set forth above with respect to claims 1 and 6, the rejections under 35 U.S.C. § 103(a) over claims 5, 8 and 9 are overcome by virtue of their dependency on these patentable independent claims.

Accordingly, the rejections under 35 U.S.C. § 102(b) and 103(a) should be reconsidered and withdrawn.

Applicant respectfully submits that the claims are now in condition for allowance and solicits early notification of the same. Should there be any questions or concerns regarding the present application, the Examiner is invited to contact Applicant's undersigned representative by telephone.

Respectfully submitted,

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MARKED UP VERSION SHOWING CHANGES MADE**Marked up amended claims:**

1. (Amended) A rotating electric machine having a stator with a slot for housing coils, and a closing member for closing the opening of the slot and forming a cooling passage in the slot, wherein the coils are formed from concentrated windings, the rotating electric machine comprising:

a regulating member for narrowing the cross-sectional area of the cooling passage in the slot, the regulating member being disposed in a substantially central section of the slot; and

two oil jackets each mounted on an end face of the stator so as to form an oil chamber on each end face of the stator, the oil chambers being connected to the slot.

6. (Amended) A rotating electric machine, comprising:

a stator having a stator core and a slot;

coils housed in the slot; and

a closing member for closing [the] an opening of the slot and [partitioning] defining a cooling passage in the slot;

wherein the coils are provided in a coiling region limited to a position near the bottom of the slot, and the overall region closer to the opening of the slot than the coils is filled by the closing member.

7. (Amended) The rotating electric machine as defined Claim 6, further comprising a stopper for supporting each of the coils, the stopper projecting from the teeth of the stator core into the inner section of the slot and being positioned on the end of the coiling region and near the opening of the slot.